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ABSTRACT

Students from different cultures may differ in their beliefs about learning and in the ways they behave in various learning situations. With the internationalization and globalization of education, it is important to investigate this possibility. There has been little research on the relationship between cultures and learning beliefs and behaviors. A study explored and compared the learning beliefs and practices of university students from a Chinese (Hong Kong) (n=132) culture and a western (Australian) (n=98) culture. Comparisons between the student groups were made on the relative importance they assigned to the learning beliefs; the strengths with which they held the beliefs; their reporting of the relative frequencies with which they used the learning behaviors; and the behavior frequencies used in different learning situations. Results showed that the Australian and Hong Kong students were similar with respect to the content of what they believed in and the relative importance they assigned to the various beliefs. They were different in the strengths with which they held these beliefs, particularly in areas concerning learning for achieving self actualization; learning for instrumental personal purposes; learning for aesthetic purposes; significance of effort and ability in learning; and the role of teachers in learning. The Australian and Hong Kong students were similar in the relative frequencies with which they reported using the various behaviors and in what they reported to engage in most and least frequently in the five learning situations. They were different in their reported use of specific learning behavior frequencies, particularly when spending their leisure time. Contains 57 references. (Author/BT)

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# Culture and Learning Beliefs and Behaviours: A Comparison of Australian and Chinese University Students

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# Culture and learning beliefs and behaviours: A comparison of Australian and Chinese university students

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Students from different cultures may differ in their beliefs about learning and in the ways they behave in various learning situations. With the internationalisation and globalisation of education, it is important to investigate this possibility. However, there has been little research on the relation between cultures and learning beliefs and behaviours. The present study explores and compares the learning beliefs and practices of university students from a Chinese (Hong Kong) and a western (Australian) culture. Comparisons between the students were made on: the relative importance they assigned to the learning beliefs, the strengths with which they held the beliefs, their reporting of the relative frequencies with which they used the learning behaviours, and the frequencies with which they used the behaviours in different learning situations. The results showed that the Australian and the Hong Kong students were similar with respect to the content of what they believed in and the relative importance they assigned to the various beliefs. Nevertheless, they were different in the strengths with which they held these beliefs, particularly in areas concerning: learning for achieving self-actualisation, learning for instrumental personal purposes, learning for aesthetic purposes, the significance of effort and ability in learning, and the role of teachers in learning. The Australian and the Hong Kong students were similar in the relative frequencies with which they reported using the various behaviours and in what they reported to engage in most and least frequently in the five learning situations. However, they were different in the frequencies with which they reported using specific learning behaviours, particularly when spending their leisure time. These results suggest that educators should pay more attention to both similarities and subtle differences between students from different cultures or countries, rather than assuming that students from certain cultures or countries think and behave in certain ways.

It has been proposed that culture determines the characteristics of a human group in a similar way to which personality determines the characteristics of an individual (Hofstede, 1980). Researchers have found that different countries have different, culturally influenced, value systems (Hofstede, 1980, 1997; Schwartz, 1992, 1994), and that people from different cultures differ in their conceptions about the appropriate ways of relating to and interacting with one another and in their perceptions of self and others (Smith & Bond, 1993; Triandis, 1988, 1994).

With the increasing global flow of students (and teachers), it is important to find out whether students from different cultures differ in their beliefs about learning and in the ways they behave in various learning situations. However, little research has been conducted on these matters. The present study investigates whether learners from a Chinese and a Western culture hold different learning beliefs and adopt different learning behaviours.

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## Review of literature

### *Beliefs*

Beliefs are regarded as information, expressed in the form of propositions, that people have about themselves and the physical and social environment (Fishbein & Ajzen, 1975; Nisbett & Ross, 1980; Rokeach, 1968, 1973). Moreover, beliefs are considered to be influential in defining and affecting behaviours (Bandura, 1986; Pajares, 1992), and in organising information and learning from experiences (Nespor, 1987; Pajares, 1992). They help individuals define and understand themselves, others, and the world, and adapt to the world and their place in it (Bandura, 1986; Pajares, 1992). They are the best indicators of the decisions individuals make throughout their lives (Bandura, 1986; Nisbett & Ross, 1980; Rokeach, 1968). Beliefs cannot be directly observed, and must be inferred from the things that the believers say or do (Pajares, 1992; Rokeach, 1968).

Fishbein and Ajzen (1975) distinguished between belief content and belief strength. While belief content refers to the statement which describes the attribute associated with the object, the strength of a belief is the subjective judgement of the probability that the object is associated with the attribute. However, irrespective of the subjective judgement of the probability of the link, a belief is formed as soon as a link is established between any two aspects of a person's world (Fishbein & Ajzen, 1975).

In this paper, the propositions that individuals have about learning are regarded as their learning beliefs, and the extent to which they agree or disagree with these propositions is considered to be the strength with which they hold particular beliefs.

### *Learning behaviours*

Researchers (Biggs, 1987; Entwistle & Ramsden, 1983; Marton, 1975; Marton & Saljo, 1976a, 1976b, 1984; Watkins, 1983) have classified learning behaviours into three learning approaches: the surface, the deep, and the achieving. The surface approach has been characterised by extrinsic motives and the strategy of meeting the requirements of the task minimally (Biggs, 1987, 1991, 1993; Marton & Saljo, 1984). The deep approach incorporates intrinsic motives and the strategy of seeking meaning and maximising understanding (Biggs, 1987, 1991, 1993; Marton & Saljo, 1984). The achieving approach is characterised by the motive to maximise performance and the strategy of organising and using time and space cost-effectively (Biggs, 1987, 1991, 1993; Entwistle & Ramsden, 1983; Watkins, 1983).

Students adopting the surface approach have been found to: perceive the task as a demand to be met; focus on the concrete and literal aspects of the task; treat the different aspects of the task as discrete and unrelated; be worried about the time the task is taking; avoid personalising the task; and rely on rote-learning the surface aspects of the task (Biggs, 1987, 1991; Entwistle, Hanley, & Hounsell, 1979; Marton, 1982; Marton & Saljo, 1984; Ramsden, 1988). Learners using the deep approach read widely, relate the content to personally meaningful contexts or to previous relevant knowledge, search for analogies and exceptions, and have interest in the task and enjoy the learning process (Biggs, 1987, 1991, 1993; Entwistle, Hanley, & Hounsell, 1979; Marton, 1982; Marton & Saljo, 1984; Ramsden, 1988). Biggs (1991, 1993) argued that students who adopt the achieving approach usually: are competitive about obtaining the highest marks; are self-disciplined and neat; make much use of cue-seeking and study skills; and allocate study time, effort, and working space to tasks systematically, deliberately and cost-effectively.

Learning approaches do not subsume all the behaviours related with learning. Metacognitive behaviour is one of the remaining types. According to Flavell (1976, 1987), metacognition can be regarded as the knowing and controlling of the how, where, when, and why of learning. Metacognition has several aspects: knowledge about cognition, awareness of one's own cognitive processes, regulation of and control over cognition (Brown, 1987; Campione, 1987; Flavell, 1976; White, 1988a, 1993), and readiness and willingness to exercise control of cognitive processes (White, 1988a, 1993).

Metacognitive processes include: goal-setting; forward planning; anticipating and predicting outcomes; evaluating costs and rewards of different actions; selecting or designing strategies for reaching goals; seeking assistance; monitoring progress; revising; re-scheduling strategies; evaluating outcomes; continuing, changing or terminating actions; and reflecting on what has been done and why (Brown, 1987; Campione, 1987; Mitchell, 1992; Nelson & Narens, 1994; White, 1993).

This study focuses on learning approaches and behaviours that indicate metacognition.

***Chinese and Australian learners***

Different and at times contradictory descriptions exist in the literature about the ways in which Chinese students approach their learning. While educators with experience in teaching Chinese and other Asian students perceived them as passive, dependent, uncritical, and more prone to rote learning than Australian students (e.g., Ballard & Clanchy, 1984,

1991, 1997; Samuelowicz, 1987), researchers who investigated empirically the learning approaches of Asian students held that these students were neither more oriented towards a surface approach nor less inclined to use a deep approach than western students (e.g., Biggs, 1989; Kember & Gow, 1991; Sadler-Smith & Tsang, 1998; Volet & Renshaw, 1996; Watkins, Reghi, & Astilla, 1991).

Chinese learners have been perceived to rely on their teachers for their learning, be obedient to their teachers, be reluctant to question or challenge their teachers' knowledge and ideas, and keep their opinions to themselves (e.g., Ballard & Clanchy, 1991, 1997; Bond & Hwang, 1986; Liu, 1986; Samuelowicz, 1987). However, some of these notions were constructed from anecdotes or classic Chinese literature, and have not been verified empirically.

It has been found that Chinese learners attribute academic achievement more to effort than to ability, and place a stronger emphasis on effort as the determinant of academic achievement than western students (Hess, Chang, & McDevitt, 1987; Stevenson, Lummis, Lee, & Stigler, 1990). They have a high value for learning and a strong emphasis on academic achievement (Bond & Hwang, 1986; Ho, 1986; Lee, 1996). They spend more time on their study than western students (Chen & Stevenson, 1989; Fuligni & Stevenson, 1995; Stevenson & Stigler, 1992). However, most of these studies have compared Chinese students with North American students. It remains to be determined whether the same characteristics of Chinese learners are identified when they are compared with other western learners.

**Research questions**

This study sets out to seek answers to two main research questions, namely, 'Do Australian students differ from Hong Kong students in their learning beliefs?', and 'Do Australian students differ from Hong Kong students in their learning behaviours and strategies?'. Several points of focus have been developed within each of these two areas of inquiry.

Research related to the first question focused on students' beliefs regarding: (1) the purposes for learning (learning for: acquiring knowledge, skills, and understanding; becoming or being independent and critical thinkers; preserving traditional wisdom and existing knowledge; achieving self-actualisation; instrumental personal purposes; living successfully in the world and with people; the benefit of societies and the world; and aesthetic purposes); (2) the processes of learning; (3) the significance of effort and ability in

learning; (4) being responsible for one's own learning; (5) the role of teachers in learning; (6) where and when learning should take place; and (7) learning as a duty to other people.

For the second research question, the points of focus are students' behaviours in: (1) preparing for an examination; (2) working on a project; (3) doing non-assessed assignments; (4) auditing a subject; and (5) spending leisure time.

## Research design

### *Participants*

Comparisons were made between 98 Australia-born Australian and 132 Hong Kong-born Hong Kong third year university students. These students were studying in their native countries in the same universities in the Faculties of Arts, Science, and Business and Economics or Social Sciences. The Australian students were aged between 18 and 30, with a mean age of 21.07 (a standard deviation of 2.32). The Hong Kong students were aged between 19 and 30, with a mean age of 21.39 (a standard deviation of 1.36).

All of the participants completed the questionnaire, and five Australian and seven Hong Kong students were also interviewed.

### *Instruments*

A questionnaire and a semi-structured interview schedule were constructed for data collection for this study. The questionnaire assesses how often students use certain learning behaviours under different learning situations and how strongly (positively or negatively) they hold certain beliefs. A five-point Likert scale format was used for these items. The interview schedule, which includes a Q-sort test, collects supplementary and explanatory information about students' learning beliefs and learning behaviours (e.g., reasons for regarding certain beliefs as important, factors that affect the use of certain behaviours).

Since the literature showed that the demands of learning tasks and the forms of assessment affect the behaviours employed, five scenarios were constructed to represent situations with and without various kinds of assessment. These scenarios consist of: preparing for an examination, doing a project, doing homework assignments for which the marks will not contribute to the final grade, auditing a subject, and spending one's free time. A list of learning behaviours was constructed for each of the five scenarios. The lists include learning behaviours which learners exhibit when they are attending lectures, tutorials, laboratory sessions, or practical sessions; when they are with their classmates or friends; and

when they are studying on their own. The learning behaviours were constructed based on: the characteristics of the surface, deep, and achieving approaches; the behaviours indicating metacognition; the adaptation of some of the questions in the Study Process Questionnaire (Biggs, 1987); the information and insights gained from Purdie's (1995) and Zimmerman and Martinez-Pons's (1986) studies on self-regulated learning; and the review of literature on the characteristics of Australian and Chinese learners. Some of these behaviours were included in more than one scenario even though the wordings may not have been the same.

The belief statements included in the questionnaire were first constructed using the information and insights gained from: the review of literature on conceptions of learning, teaching, or schooling (Marton, Dall'Alba, & Beaty, 1993; Saljo, 1979; White, 1988b); the educational policies, goals, objectives, or mission statements contained in the handbooks, calendars, or world wide web pages of universities from the two targeted countries (Hong Kong and Australia); and the review of literature on the characteristics of Chinese and Australian learners. The constructed statements were then synthesised and categorised, and the resulting items were randomly ordered into a single list.

***Data collection and analysis***

After ethics approval and permission were obtained, students who had agreed to participate in the study filled in the questionnaire during their free time. Students from the pool of participants who had agreed to be interviewed were randomly selected for interviewing.

Responses to the questionnaires were converted into numerical values. Means and standard deviations for each of the learning beliefs and the learning behaviours were calculated separately for the Hong Kong and the Australian students. After checking if the two samples of students differed in their general patterns of responding to Likert scale format items, a multivariate analysis of variance (MANOVA) of the two countries and three faculties was carried out for the belief and the behaviour items respectively, to investigate if the differences between the students were affected by the disciplines studied and if there were any interactions between the cultures and the disciplines. The relations between age and beliefs held, and between age and behaviours used were also examined. Then, analysis of variance (ANOVA) tests were conducted to investigate if significant differences existed among the two samples of students in their learning beliefs and behaviours. The belief and the behaviour items were also rank-ordered within each sample of students according to the means for the items. These lists of rank orders were used to examine the relative importance of the beliefs to the students and the relative frequencies with which the students reported

using the various learning behaviours. An alpha level of 0.05 was used for all the statistical tests reported in this paper.

The interview transcripts of individual interviewees were analysed to identify students' views and explanations regarding their main learning beliefs and behaviours. Then excerpts of responses from different interviewees were synthesised and categorised. The interviewees' responses on the questionnaire and at interview were compared to investigate the consistency with which the students responded to the same items in different situations.

## Results

### *Similarities and differences of the students in their learning beliefs*

The correlation coefficient of the rank orders, and that of the means for the belief items of the two samples of students were 0.908 and 0.928 respectively. However, the results of the analysis of variance indicate that they held 30 of the 81 beliefs with statistically significantly different means. These items were dispersed among the various categories of learning beliefs.

Regarding learning for acquiring knowledge, skills and understanding, both the Hong Kong and the Australian students held strongly that to learn is: to develop thinking strategies, attitudes and values; to acquire different kinds of skills and the skills to learn; to master the subject matter and techniques of the disciplines; to apply knowledge learned to new or practical situations; and to link together the different bits of knowledge, and that what matters in learning is whether it results in changes in learners' concepts, skills and attitudes. Neither of the two groups of students held strongly that to learn is to remember and repeat knowledge, nor that what matters in learning is how much is learned. Nevertheless, the Australian students believed statistically significantly more strongly than their Hong Kong counterparts that to learn is to change as a person ($t$ = -4.926, $p < 0.0005$), and were more concerned with the acquisition of skills ($t$ = -3.066, $p$ = 0.002). The Hong Kong students believed statistically significantly more strongly than the Australian students in the importance of the quantity of what is being learned ($t$ = 3.708, $p < 0.0005$).

Regarding learning for becoming or being independent and critical thinkers, both groups of students held strongly that learning: involves expression of own views and opinions; is for developing creative, and logical, analytical and critical thinking; is for becoming independent thinkers and decision makers; and is self-directed. Nevertheless, the Hong Kong students believed statistically significantly more strongly than the Australian

students that the expression of their own views and opinions is involved in learning ($t$ = 2.028, $p$ = 0.044).

Both the Hong Kong and the Australian students were neither strongly for nor against learning for preserving traditional wisdom, but they believed strongly that learning is for acknowledging and understanding the past. They also believed strongly in advancing knowledge and improving current practices, and in the importance for learning of asking questions of oneself, others and commonly accepted theories and views. However, the Australian students held statistically significantly more strongly than their Hong Kong counterparts that learning is for the advancement of knowledge ($t$ = -2.210, $p$ = 0.028), and that learning involves asking questions ($t$ = -3.213, $p$ = 0.002).

About learning for achieving self-actualisation, both the Hong Kong and the Australian students held strongly that learning is for: personal growth and improvement, personality development, fostering self-discipline, developing personal competence, and contemplating the meaning of knowledge for learners themselves. They also believed that learning is for developing professional competence, and for reflecting on what learners themselves have said or done. However, the Australian students believed statistically significantly more strongly than the Hong Kong students that learning is for developing personal competence ($t$ = -2.137, $p$ = 0.034), for personal growth and improvement ($t$ = -2.385, $p$ = 0.018), and for reflecting on what one has said or done ($t$ = -2.127, $p$ = 0.034).

About learning for instrumental personal purposes, both groups of students expressed a moderate belief that learning is for gaining power, and for further studies. They believed that learning is for gaining professional and academic qualifications. However, the Hong Kong students held statistically significantly more strongly that learning is for having a more materially rich life ($t$ = 3.482, $p$ = 0.001), and for moving up to a higher status ($t$ = 2.452, $p$ = 0.015). The Australian students were neither strongly for nor against these two beliefs. Although neither of the samples of students believed that learning is for excelling over others, the Hong Kong students believed statistically significantly more strongly in this than their Australian counterparts ($t$ = 2.240, $p$ = 0.026)

Regarding learning for living successfully in the world and with people, both groups of students believed strongly that learning is for: developing social competence; living harmoniously with other people; developing an understanding of, and respect for other cultures; responding to the needs of the changing society and world; and interpreting the world. They also believed that learning is for: existing harmoniously with nature, building a peaceful world, developing the ability to take a leadership role, and mastering the world.

Nevertheless, the Australian students held statistically significantly more strongly than the Hong Kong students that learning is for interpreting the world people live in ($t$ = -3.750, $p$ < 0.0005).

Regarding learning for the benefit of societies and the world, both the Hong Kong and the Australian students held strongly that learning is for: socially responsible use of technology and resources; developing social and environmental responsibility; contributing to the social and moral development of the society; building a more educated and a culturally rich society; and developing responsible citizens. However, the Hong Kong students believed statistically significantly more strongly in building an economically prosperous society ($t$ = 4.221, $p$ < 0.0005), whereas the Australian students believed significantly more strongly in developing environmental responsibility ($t$ = -4.306, $p$ < 0.0005).

Regarding learning for aesthetic purposes, although both samples of students held that learning is for pleasure, freedom, and seeking truth and beauty, the Australian students believed statistically significantly more strongly than the Hong Kong students that learning is for pleasure ($t$ = -4.245, $p$ < 0.0005) and for freedom ($t$ = -3.849, $p$ < 0.0005).

Regarding the processes of learning, both the Hong Kong and the Australian students believed strongly that: interest is crucial for learning; facts and skills are added to learners' repertoires in the learning process; learners should participate actively in the learning process; and learning involves the making of meaning by learners. They did not believe that learning has a definite path. Nevertheless, the Australian students held statistically significantly more strongly than their Hong Kong counterparts that the learning process adds facts and skills to learners' repertoires ($t$ = -3.204, $p$ = 0.002), and that there is a definite path for learning ($t$ = -2.544, $p$ = 0.012).

About the significance of effort and ability in learning, both groups of students held very strongly that: learners should persist when encountering difficulties; learning needs a lot of time; and effort, perseverance and commitment are more important than ability in learning. They also believed that all people can learn well if they work hard enough. However, the Australian students believed significantly more strongly than the Hong Kong students in working hard ($t$ = -2.508, $p$ = 0.013), whereas the Hong Kong students held significantly more strongly that learning needs a lot of time ($t$ = 2.199, $p$ = 0.029). Moreover, although neither sample believed strongly that tertiary education is for able students, the Australian students had a statistically significantly higher mean for this item than the Hong Kong students ($t$ = -2.090, $p$ = 0.038).

About being responsible for one's own learning, both the Hong Kong and the Australian students believed strongly that learners themselves should: have final responsibility for and

control over their learning; aim at pursuing knowledge deeply; and do their best in their learning. However, the Hong Kong students had a statistically significantly higher mean than the Australian students with regard to the belief that learners should have control over their learning ($t = 2.521$, $p = 0.013$). Although neither sample of students believed that learning is something that teachers achieve, the Hong Kong students believed statistically significantly more strongly in this than their Australian counterparts ($t = 4.969$, $p < 0.0005$). This may be an example of the greater readiness of Australian students to choose the extreme values on the scale.

Regarding the role of teachers in learning, neither the Hong Kong nor the Australian students believed that teachers are a must for learning, and that learners should behave as teachers direct. Nevertheless, the Hong Kong students believed statistically significantly more strongly in the necessity of teachers ($t = 2.110$, $p = 0.036$). Both groups of students believed strongly that learning results from competent, effective and quality teaching. However, the Hong Kong students held significantly more strongly than the Australian students that teachers possess the appropriate content knowledge ($t = 2.398$, $p = 0.017$), whereas the Australian students believed significantly more strongly that interactions between learners and teachers are a must for learning ($t = -2.548$, $p = 0.011$).

About where and when learning should take place, both samples of students believed very strongly that: learning takes place and continues throughout life; there are things to learn from everyone; and all situations provide potential learning experiences. Moreover, neither the Hong Kong nor the Australian students held strongly that learning needs to be taught and evaluated in an institution, and that resources are a must for learning. However, the Hong Kong students believed statistically significantly more strongly in the necessity of resources than their Australian counterparts ($t = 2.459$, $p = 0.015$). On the other hand, even though both groups of students held most strongly among the 81 beliefs that learning continues throughout life, the Australian students believed significantly more strongly in this than the Hong Kong students ($t = -3.069$, $p = 0.002$). Again, this might be a consequence of the greater readiness of Australian students to choose extreme values. The Australian students also held statistically significantly more strongly that all situations provide learning experiences ($t = -5.401$, $p < 0.0005$).

Both the Hong Kong and the Australian students believed, even though not strongly, that learning is a duty to oneself and to other people or the society. The two groups of students did not differ statistically significantly from each other in the strength with which they held this belief.

***Similarities and differences of the students in their learning behaviours***

The correlation coefficient of the rank orders, and that of the means for the behaviour items of the two samples of students were 0.875 and 0.889 respectively. However, the results of the analysis of variance indicate that they differed statistically significantly from each other in their means for 28 of the 87 behaviour items.

In preparing for an examination, both the Hong Kong and the Australian students reported a high frequency in reviewing past tests and assignments to know the answers, and in arranging the physical environment to facilitate studying and concentration. They also frequently made their own notes, went through past work to find out why they went wrong so that they could avoid making the same mistakes, rewarded themselves, memorised important points for reproducing them at examination, and looked out for hints about the examination from teachers. On the other hand, the students seldom expressed disagreement with their teachers and offered their own ideas. Besides, they reported a low frequency in thinking about the shame brought onto their family if they failed, and in questioning their teachers' ideas.

However, the Hong Kong students engaged statistically significantly more frequently than the Australian students in working with their classmates to figure out the examination questions and to prepare answers for these questions ($t = 2.092$, $p = 0.038$), setting up a study schedule and revising as planned ($t = 2.602$, $p = 0.010$), monitoring the progress of their study and revision ($t = 2.792$, $p = 0.006$), and thinking about the shame that would be brought onto their family if they failed ($t = 3.883$, $p < 0.0005$). The Australian students reported significantly greater frequency in finding out from teachers hints about the exam ($t = -9.835$, $p < 0.0005$) and the content and formats of the exam questions ($t = -2.996$, $p = 0.003$), reflecting on and linking what they had heard and seen ($t = -3.756$, $p < 0.0005$), doing similar exercises to remember how to do them ($t = -3.852$, $p < 0.0005$) and to improve the skills needed ($t = -2.729$, $p = 0.007$), and testing themselves on important topics ($t = -2.550$, $p = 0.011$).

In doing a project and then writing an essay or a report on it, both the Hong Kong and the Australian students reported a high frequency in choosing a topic that they were interested in and that suited their strengths, making an outline before writing the essay or report, and revising the drafts. They also frequently asked teachers to specify the requirements of the task and the allocation of marks, linked what they had known to the project, checked if the project was completed before handing it in, and arranged the physical environment to facilitate their work. On the other hand, the students seldom skipped lectures

to work on the project. Moreover, they reported a low frequency in asking teachers to let them work in groups, and in modifying old projects and using them as their own.

Nevertheless, the Australian students checked if the project was done properly statistically significantly more frequently than their Hong Kong counterparts ($t$ = -2.033, $p$ = 0.043). The Hong Kong students reported significantly greater frequency in requesting teachers to let them work in groups ($t$ = 2.798, $p$ = 0.006), finding out teachers' positions on certain issues ($t$ = 2.593, $p$ = 0.010) and opinions on their approaches ($t$ = 3.474, $p$ = 0.001), working on their own projects by modifying old projects ($t$ = 5.677, $p < 0.0005$), and writing the essay or report based only on information from lectures, textbooks and suggested readings ($t$ = 3.975, $p < 0.0005$).

In doing non-assessed take-home assignments, both the Hong Kong and the Australian students reported frequently discussing with their classmates questions that they did not know how to do, and relating what they had learned to the assignments. They reported a low frequency in copying their friends' work. However, the Hong Kong students engaged statistically significantly more frequently than the Australian students in making sure that the assignments were done correctly before handing them in ($t$ = 2.272, $p$ = 0.024), discussing questions ($t$ = 2.134, $p$ = 0.034) and sharing useful strategies ($t$ = 2.147, $p$ = 0.033) with their classmates, and copying others' work ($t$ = 3.402, $p$ = 0.001).

In auditing a subject, both the Hong Kong and the Australian students reported that they did not use most of the behaviours and strategies frequently. They moderately frequently worked on their own, and reflected on and linked what they had heard and seen. They reported a low frequency in expressing disagreement with teachers, setting up study schedules, monitoring the progress of their study, doing similar practice exercises, and memorising information. However, the Hong Kong students engaged statistically significantly more frequently than their Australian counterparts in asking teachers questions to clarify their own understanding ($t$ = 3.196, $p$ = 0.002), and in expressing disagreement with teachers ($t$ = 2.270, $p$ = 0.024). The Australian students significantly more frequently reflected on and linked what they had learned ($t$ = -3.159, $p$ = 0.002).

In spending their time after school, both the Hong Kong and the Australian students reported a high frequency in relaxing and doing things not related to their studies. On the other hand, they seldom went over their university work with private tutors. They also reported a low frequency in joining academic activities, and taking art or music lessons. Nevertheless, the Hong Kong students engaged statistically significantly more frequently than the Australian students in taking art or music lessons ($t$ = 3.415, $p$ = 0.001), and going

over their academic work with private tutors ($t = 5.656$, $p < 0.0005$). The Australian students significantly more frequently thought about things related to their studies ($t = -3.442$, $p = 0.001$), engaged in household chores ($t = -3.276$, $p = 0.001$), and did paid work ($t = -5.049$, $p < 0.0005$).

**Discussion**

Results of the study show that the Australian and the Hong Kong students were similar with respect to the content of what they believed in, and the relative importance they assigned to the various beliefs. However, the students placed different emphases on different beliefs, particularly in areas concerning: learning for achieving self-actualisation; learning for instrumental personal purposes; learning for aesthetic purposes; the significance of effort and ability in learning; and the role of teachers in learning.

In addition, the Australian and the Hong Kong students were similar in the relative frequencies with which they reported using the various behaviours and in what they reported to engage in most and least frequently in each of the five learning scenarios. However, they reported using different behaviours with different frequencies, particularly when spending their leisure time.

The results do not support the notions that Chinese students rely mainly on a surface, reproductive mode of learning; are passive, uncritical, and dependent; rely on and hold their teachers responsible for their learning; and are reluctant to question their teachers' knowledge and ideas. On the contrary, the Chinese students presented themselves as metacognitive in their learning, and believed strongly in learning for developing the ability to think critically, creatively and independently. They engaged in behaviours such as monitoring their study and their work, going through past work to learn from their mistakes, and linking what they had seen and heard with their work. They also held strongly that they were responsible for their own learning and that learning involves asking questions and expressing their own views and opinions. Nevertheless, the Australian and the Chinese students place different emphases on the part that teachers play in their learning, particularly in aspects about teachers possessing appropriate content knowledge and about interactions between learners and teachers.

Data from this study are congruent with previous findings that show that Chinese students place a strong emphasis on effort as the determinant of academic achievement, regard effort as more important than ability in academic successes and failures, and spend

more time in academic endeavours, and that western students place a stronger emphasis on ability than Chinese students. However, in addition this study finds that Australian students also regard effort, persistence, and working hard as important in learning. Where the Australian participants differed from the Chinese participants is in considering ability to be unchangeable and its lack not to be compensated for by putting in effort.

Importantly, the Australian and the Hong Kong students did not take opposite stances in the learning beliefs and behaviours investigated in this study. Instead of being dichotomously different from each other on a bipolar continuum with different qualities on each end (e.g., the continuum of effort to ability), they occupied different positions along a number of different continua that represent single qualities (e.g., effort).

These findings suggest that although students from different countries or cultures may differ in their learning beliefs and practices, the differences may be more subtle than previous research would indicate. Therefore, educators should pay more attention to and cater for both similarities and subtle differences between students from different cultures or countries, rather than assuming that students from certain cultures or countries think and behave in certain ways.

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